What is claimed is:

    1.   A   method   of   identifying   senile   plaques, neurofibrillary tangles and neuropil threads in brain tissue comprising:

5   (a) contacting brain tissue with a fluorescent dye capable of intercalating selectively into nucleic acids; and

    (b) detecting any fluorescence in the brain tissue indicative of senile plaques, neurofibrillary tangles and neuropil threads in the brain tissue.

10   2.   A method of identifying RNAs in senile plaques, neurofibrillary tangles, and neuropil threads of brain tissue which   encode   proteins   involved   in   the   pathogenesis   of Alzheimer's disease comprising:

    (a) isolating single senile plaques in brain tissue by
15 immunocytochemical techniques;

    (b) identifying the presence of RNA by contacting said senile plaque with a fluorescent dye capable of intercalating selectively into nucleic acids;

    (c) amplifying the identified RNA; and

20   (d) determining whether the amplified RNA product hybridizes to any known cDNAs for proteins involved in the pathogenesis of Alzheimer's disease.

    3.   A method of diagnosing Alzheimer's disease in a patient suspected of having Alzheimer's disease comprising
25 detecting the presence of an RNA identified by the method of claim 2 in the brain of the patient.

    4.   A method of detecting the presence of messenger RNA in senile plaques, neurofibrillary tangles, and neuropil threads of brain tissue wherein said messenger RNA encodes a
30 protein involved in the pathogenesis of Alzheimer's disease comprising:

a) isolating single senile plaques in brain tissue by immunocytochemical methods;

b) identifying the presence of RNA by contacting said senile plaque with a fluorescent dye capable of
5 intercalating selectively into nucleic acids;

c) amplifying said RNA; and

d) hybridizing the amplified RNA product to a known cDNA for a protein involved in the pathogenesis of Alzheimer's disease.